

1995 Personal Log of:

Ronald K. Markyvech

Best Available Copy

Exhibit 23

01-02-95 Holiday  
01-03-95 Worked on the R-747 program.  
01-04-95 Worked on the R-747 program.  
01-05-95 Worked on the R-747 program.  
01-06-95 Worked on the R-747 program.

01-09-95 Worked on the R-747 program.  
01-10-95 Worked on the R-747 program.  
01-11-95 Went to Marshall and Galesburg for AutoSplit and R-747. Worked from 6:30 am to 9:00 pm.  
01-12-95 Worked on the R-747 program. Took two hours off as comp time.  
01-13-95 Worked on the R-747 program. Took two hours off as comp time.  
01-14-95 PERSONAL > Brenda @ 10:45 P.M.

01-16-95 SICK 8.5 hours  
01-17-95 SICK 1.5 hours. Worked on R-747 program. Had to leave early to pick up an ill Tiffany but made up for it by coming back later and collecting the test chamber data.  
01-18-95 Finished collecting the test chamber data for the neutralizing piston and plotted the data, (piston02.wq1).  
01-19-95 Rewrote the code to utilize the neutralizing piston. Also started striping unused code from the software in preparation for transferring it to TCONA.  
01-20-95 Started debugging the neutralizing piston code in the vehicle.

01-21-95 SAT. Worked a full day on the neutralizing piston software.

01-23-95 Worked on the neutralizing piston software.  
01-24-95 Worked on the neutralizing piston software.  
01-25-95 TCONA - delivered the truck and did a tech transfer.  
01-26-95 TCONA - finished the tech transfer.  
01-27-95 Group meeting today. (Charged the day to R-747)(see 02-03-95)

01-30-95 Attended a software training class.  
01-31-95 Attended a software training class.  
02-01-95 Attended a software training class.  
PERSONAL > Dr. Misch - cleaning - 7:30 P.M.  
02-02-95 Attended a software training class.  
02-03-95 Took day off as R-747 comp time. (Charged day to Dan)(see 01-27-95)

02-06-95 Started new work for Smedley - gathering engine manufacturer data. Also started Greg's PWM software task by calling Don Rozzi and setting up a meeting for Thursday of this week. Dan has also given me the task of learning the PCMCIA CAN card. Barry Hogans continues to work on my "pocket programmer".  
02-07-95 Worked on talking to engine manufacturers for J1939 info.  
02-08-95 Worked on talking to engine manufacturers for J1939 info. Started pulling together stuff for Greg's PWM software. Talked to Arden, Joes, Mark Leonard about solenoid driver spec's.  
PERSONAL > Started another root canal with Dr. Misch.  
02-09-95 Went to Galesburg to get AutoSelect software and hardware from Don Rozzi.  
02-10-95 Did follow up calls to the engine manufacturers for Dan.

02-13-95 Worked on Greg's ball ramp software setup. Got all of the AutoSelect base software to compile and link.  
02-14-95 Worked on Greg's ball ramp software setup. Worked on the test setup.  
02-15-95 Worked on Greg's ball ramp software setup. Finally got the setup to do a software download and got PANEL working. Yippee!  
02-16-95 Cleaned up the mess from the last three days and started working on some VISIO drawings for Tom's Automation Alternatives project.  
02-17-95 Continued working on the VISIO drawing for Tom.

02-20-95 Finished the VISIO drawings for Tom.  
Added the two wires for the ball ramp inertia brake to the AutoSelect wire harness on the silver concept vehicle.  
02-21-95 Worked on the ball ramp inertia brake. Hooked up the high current coil to the PWM test box to get current vs. freq. vs duty cycle.  
02-22-95 Attended an all day Microsoft EXCEL course.  
02-23-95 Started writing PWM control code for the AutoSelect.  
02-24-95 Continued with the PWM AutoSelect control code.

02-27-95 Continued with the PWM AutoSelect control code. Broke the code into more manageable functions. Added `pwm_trigger` code that would be used in the truck.  
02-28-95 Continued with the PWM AutoSelect control code.  
03-01-95 Continued with the PWM AutoSelect control code.  
03-02-95 SICK - 8.5 hours.  
03-03-95 Continued with the PWM AutoSelect control code.

03-06-95 Started the PCMCIA CAN card work for Don St. John.  
03-07-95 Worked on the PCMCIA CAN card.  
PERSONAL> Finished a root canal/crown with Dr. Misch.  
03-08-95 Worked on the PCMCIA CAN card.  
03-09-95 VACATION - 8.5 hours  
03-10-95 Worked on the PCMCIA CAN card. Tried calling Don St. John to transfer work to him.  
03-11-95 PERSONAL> Saturday - Brenda - haircut

03-13-95 Showed Don St. John that the CAN card works. Started RAM check code for Tony Torres, (EFAS).  
03-14-95 Worked on the KT RAM check software.  
03-15-95 Finished the KT RAM check software for Tony. Was the system lab host for the TCOMA new hire orientation tour.  
03-16-95 Started new work for Don St. John doing PCMCIA engine control. Cobbled up some code that sends an engine message to the AutoSplit controller.  
03-17-95 Continued work with the CANcard that communicated with the Autosplit controller. I have the communications going in both directions now.

03-20-95 Worked on the EFAS touch panel driver test software for Tony. Tony reviewed my work on the KT RAM test code and found it acceptable. Also talked to Don St. John about the DVA work he wants done.  
03-21-95 Continued work on the EFAS touch panel driver software.  
03-22-95 Started back on DVA software. Got a bench setup so that I can communicate with a AutoSplit ECU and test the CAN program.  
03-23-95 Worked on the Kenworth AutoSelect truck - replaced the AutoSelect ECU with an AutoShift ECU that has PANEL, then disabled the engine\_brake\_relay diagnostics to get us up and running. Back to DVA software after lunch.  
03-24-95 DVA software - found that I really wanted to use the dynamic buffer mode instead of the FIFO mode. Spent most of the day reading the CAN manual.

03-27-95 DVA software - rewrote much of the code to work in the dynamic buffer mode.  
03-28-95 DVA software - refined the dynamic mode more. Gave code to St. John to integrate with his main DVA source.  
03-29-95 DVA software - Don linked in my code and debugged the initcomm() function using his own CANcard.  
03-30-95 DVA software - Started converting my bench code to work with the actual electronic engine, (DVA\_CAN3). Truck may be here Friday!  
03-31-95 DVA software - continued converting bench code to work with the truck.  
04-01-95 Saturday - Worked four hours on the software for the AutoSplit demo scheduled for the end of this month.

04-03-95 DVA work - added the J1939 cable to the demo vehicle. Worked on some VISIO drawings for Genise's Automation Alternatives project.  
04-04-95 DVA work - Gary Johnson, (Detroit Diesel), came to CORD and enabled the J1939 link. Worked on the stand alone test for communications. Other - tested and debugged the new pocket programmer.  
04-05-95 DVA work - worked on my stand alone test.  
04-06-95 DVA work - worked with Don St John on testing the DVA code in the real truck environment. Demo'd to Kevin McGovern. Had some problem with the engine light coming on - called Gary Johnson to come out tomorrow.  
04-07-95 Gary Johnson came out and determined that we had an output speed sensor problem. He will try to get one for us on Monday morning. Worked two hours of OT on the AutoSplit demo program.  
04-08-95 SATURDAY - worked all day on the AutoSplit demo program. Made a lot of progress.

04-10-95 Stayed home sick.  
04-11-95 Worked on the AutoSplit Brt. demo software. Make the system a SlickShift, (poke & hope), and then added torque limit in the lower gears.  
PERSONAL > Dr. Baker at 3:45 P.M.  
04-12-95 Worked with the AutoSplit stuff some more.  
04-13-95 Took a comp day off for working last Saturday. Charged to AutoSplit.  
04-14-95 Left for Florida!

04-24-95 Worked on the three position splitter software.  
04-25-95 Worked on the three position splitter software.  
04-26-95 Worked on the three position splitter software.  
04-27-95 Worked on the three position splitter software.  
04-28-95 Worked on the three position splitter software.

04-29-95 Worked 6 hours on Saturday - will take comp time later.

05-01-95 Worked 10 hours preparing for the demo's on Tuesday and Wednesday.

05-02-95 Went to Marshall for the demo to Keith Parmee. Worked till 6:30 p.m.

05-03-95 Went to TCONA for the demo went Alan Best. Got home at 9:30 p.m.

05-04-95 Took comp time off.

05-05-95 Took comp time off.

PERSONAL> Dr. Baker, 3:00 P.M.

05-08-95 Played with some code for Don Rozsi to use the inertia brake to get a start gear.

05-09-95 Put a new Rev 7 ECUII in the truck and took Greg for a drive.

05-10-95 Played with the AutoSplit truck.

05-11-95 Took Johnny out in the AutoSplit and got some data on the clunky 7-8 shift. Data shows that the splitter is engaging before we actual ask for it. (PWM problem) NOTE: Never had an ECU reset problem until I made a software change and used the ZIF socket.

05-12-95 Drove my car as the lead car in Shuby's SmartCruise test with the Chrysler. (89 miles)

05-13-95 PERSONAL> Brenda, 2:15 P.M.

05-15-95 Prepared for a meeting with TCONA personal and made the bench setup for Greg's ball ramp brake functional again. (for the meeting).

Talked to Tony about the operating system survey.

PERSONAL> Called H-P about my 560C ink problem. They were helpful and stated that a "ink station keeper" would be mailed to me.

05-16-95 State of Center Meeting; Met with Don Rozsi and Terry Ailes from TCONA to talk about AutoShift's problem of getting a start gear; Drove my car as the lead car in Shuby's SmartCruise test with the Chrysler. (123 miles)

05-17-95 Didn't do a darned thing all day.

05-18-95 Didn't do a darned thing all day.

05-19-95 VACATION - 6 hours

05-22-95 Got software and hardware ready to go to Marshall to install an inertia brake in the Concept Truck. This is needed to get a start gear because the Spicer brake does not seem to be working.

05-23-95 Went with Mike Miller to Marshall to install, test, debug an inertia brake in the Concept Truck.

05-24-95 Worked with Eric VonDeyen to debug the inertia brake PWM code.

PERSONAL> Got the H-P "ink station keeper" installed and put in a new black cartridge.

05-25-95 Worked to debug the inertia brake PWM code.

05-26-95 VACATION - 6 hours

05-29-95 HOLIDAY - 8.5 hours

05-30-95 Finally got all the bugs worked out of the inertia brake PWM code.

05-31-95 Hooked the inertia brake/transmission to my software and did some static tests (with Greg). (Brake and software work great!)

06-01-95 Went to Marshall to aid in the testing of the AutoBrake system (with S. Chakraborty and M. Miller).

06-02-95 Worked on stuff??

06-05-95 Went to Marshall to aid in the testing of the AutoBrake system.

06-06-95 Went to Marshall to aid in the testing of the AutoBrake system.

06-07-95 Went to Marshall to aid in the testing of the AutoBrake system.

06-08-95 AutoSplit truck - put the socketless OTP chip back in due to reset complaints.

06-09-95 VACATION - 6.0 hours

06-12-95 Went to Marshall to aid in the testing of the AutoBrake system.

06-13-95 Went to Marshall to aid in the testing of the AutoBrake system.

06-14-95 Talked to Shubhayu about Vorad/Autobrake integration.

Looked over the M-916A1 for cruise control installation information.

06-15-95 Went to Marshall to aid in the testing of the AutoBrake system.

06-16-95 VACATION - 6.0 hours

06-19-95 Worked on the army truck cruise control.

06-20-95 Worked on the army truck cruise control.

06-21-95 Went to Marshall to aid in the testing of the AutoBrake system.

06-22-95 Went to Marshall to aid in the testing of the AutoBrake system.

06-23-95 VACATION - 6.0 hours (actually worked 8 hours - took 7-03-95 off)

06-26-95 VACATION - 8.5 hours

06-27-95 VACATION - 8.5 hours

06-28-95 VACATION - 8.5 hours

06-29-95 VACATION - 8.5 hours

06-30-95 VACATION - 6.0 hours

07-03-95 Worked on army truck cruise control (see 06-23-95)

07-04-95 HOLIDAY  
07-05-95 Don't remember. (7-11-95)  
07-06-95 Worked in Marshall on the AutoBrake. (12 Hours)  
07-07-95 Worked in Marshall on the AutoBrake. (8 Hours)

07-10-95 Took the AutoSplit truck to Kensington hill as a check out to make sure the vehicle is still function for Fridays Marshall demo.  
07-11-95 Hours on phone looking for army truck cruise control brake switch. AutoBrake data review meeting.  
Met with Howard Gordon about patents.  
07-12-95 Went to TCOHA for a J1939 meeting. Stopped in Marshall on way home for NHSTA demo of AutoBrake. (Worked 5 hours of OT)  
(Note: charged today to Tom's AutoSplit - see 07-18-95)  
07-13-95 Ordered an air switch for the army truck.  
Went to Marshall for the demo tomorrow. (spent the night since the demo starts at 7:00 A.M.)  
07-14-95 All day at Marshall Proving Grounds for AutoSplit part of major demo. (Worked 7 hours of OT)

07-17-95 Took today off as a comp day to make up for 7-12-95 & 7-14-95.  
07-18-95 Worked on the 7-spd AutoShift. (Note charged today to the number, 6070-01, Dan gave me for 7-12-95)  
Also worked on the AutoSplit code for Tom.  
07-19-95 Put the new AutoSplit code in the truck after I worked on an ECU that Tom and I modified to have a ZIF socket soldered down.  
07-20-95 Three hours in a DVA meeting.  
Put together a binder of some of the seven speed AutoShift software.  
07-21-95 Worked on learning the transmission manager code for the seven speed AutoShift. (Note: from here on it is "AS7")  
PERSONAL > Dr. Baker

07-24-95 Worked on learning the transmission manager code for the AS7.  
07-25-95 EXCEL class today.  
07-26-95 Worked on learning the transmission manager code for the AS7.  
07-27-95 Worked on learning the transmission manager code for the AS7.  
07-28-95 Worked on learning the transmission manager code for the AS7.  
07-29-95 PERSONAL Sat. - Brenda at 11:30 A.M.

07-31-95 Worked on the J1939 cable communication test set up. Mostly talked to Jim Lane, K. Williams, Joe Mazur. Also set up my ABS ECU / CAN bench to show Mazur  
08-01-95 Went to Marshall to help with AutoBrake testing.  
08-02-95 Worked on the two ABS ECU setup to test J1939 cables for Trux\_Mux.  
08-03-95 Worked on the two ABS ECU setup to test J1939 cables for Trux\_Mux.  
PERSONAL> Dr. Vicki Anton-Athens' associate Dr. Holmes 4:15 P.M.  
08-04-95 Started the bench setup for the AS7. (AutoSplit Seven speed)  
PERSONAL> Dr. Baker 2:45 P.M.

08-07-95 Worked on seven speed AutoShift, (AS7).  
08-08-95 Worked on seven speed AutoShift, (AS7).  
08-09-95 Worked on seven speed AutoShift, (AS7).  
08-10-95 Worked on seven speed AutoShift, (AS7).  
08-11-95 Worked on seven speed AutoShift, (AS7).

08-14-95 Worked on seven speed AutoShift, (AS7).  
08-15-95 Worked on seven speed AutoShift, (AS7).  
08-16-95 Worked on seven speed AutoShift, (AS7).  
08-17-95 Worked on seven speed AutoShift, (AS7). Tried to calibrate the four rail for the first time - still some work to do.  
PERSONAL> Dr. Vicki Anton-Athens & Dr. Holmes 5:45 P.M.  
08-18-95 Worked on seven speed AutoShift, (AS7).

08-21-95 New Mexico vacation.  
08-22-95 New Mexico vacation.  
08-23-95 New Mexico vacation.  
08-24-95 New Mexico vacation.  
08-25-95 New Mexico vacation.

08-28-95 Worked on the 7 spd AutoShift. Found that the reverse gear switch would give a mismatch when trying to engage low gear. Commented out that code and now have reverse and low gear. Started on rail D problems. Found that our "x\_outside\_offset" was to small causing an interlock problem. Now I can get 7th but still cannot get 6th.  
08-29-95 Found the problem with 6th gear on the seven speed AutoShift. The X-Y finger hits a raised portion on the 7th gear block! - Now what do I do about it with everybody gone??  
08-30-95 Made an A/B box harness for the AS7 that will let me program and monitor either system with just a single switch.  
08-31-95 Worked on the AS7 code trying to get the system manager to tell

the trans manager that I wanted the inertia brakes on. Also modified the trans manager to pay attention. (still working on it)

PERSONAL> Dr. Vicki Anton-Athens & associate 5:45 P.M

09-01-95 Got the two systems to talk and agree on the inertia brake message.

PERSONAL> Dr. Baker 2:45 P.M.

09-03-95 PERSONAL> Built my own CTALK board to install in the A/B switch box.

09-04-95 HOLIDAY

09-05-95 Finished the A/B switch box by adding the internal CTALK circuit I built over the holiday. Talked to Mark Lanting about the X-Y not wanting to engage 6th gear. Added code to let the inertia brake aid in getting the starting gear.

09-06-95 Reviewed with Tom progress to date, (he has been on vacation). Talked to Don Rozsi and Eric Alexander about AS7 issues.

Talked to JDIII about next AS7 steps.

09-07-05 Tom brought the seven speed transmission upstairs and we tried to calibrate and run the gears. No luck - the shift bar housing from the "T" trans didn't work with the "TX" trans. By changing around the shift bar housing rods and forks Tom was able to come up with a final arrangement that WORKS!! I worked on putting a driver command console into its tower and externally installing the service port for easy access.

09-08-95 Finished the driver command console tower installation. (Adding the J1939 link and bolting everything into the tower.)

09-11-95 Finished stripping the AutoSplit wire harness out of the vehicle that is going to be used for the seven speed AutoShift.

Worked on the cost estimate for the software portion for Slicker's new X-Y motor project.

Attended a 1996 work load meeting with Smedley, Genise, Organek and Slicker.

09-12-95 Worked on the vehicle interface wiring of the seven speed AutoShift.

09-13-95 Worked on the vehicle interface wiring of the seven speed AutoShift.

09-14-95 Worked on the vehicle interface wiring of the seven speed AutoShift.

PERSONAL> Dr. Vicki Anton-Athens 5:45 P.M

09-15-95 Worked on the vehicle interface wiring of the seven speed AutoShift.

PERSONAL> Brenda at 2:45 P.M.

09-18-95 Worked on the vehicle interface wiring of the seven speed AutoShift. Finished the installation - waiting for the transmission to be installed and begin the initial system check out.

09-19-95 Worked on setting up the second seven speed AutoShift system on the bench. Found that the second power interface module was shorted power to ground - had to cut out the diodes and circuit breakers and splice the wires together. The second shift bar housing was modified like the first - added metal to reduce the X sweep and removed metal to allow 6th gear.

09-20-95 Got the second seven speed AutoShift system working on the bench with help from Tom and JDIII.

09-21-95 Made a second COMM cable for installation in the truck since TCONA could only provide us with one. (Used on the bench)

09-22-95 Attended state of the center meeting. Rerouted a hose on the AS7 truck that was interfering with my stuff.

09-25-95 Worked on project 6152-01, (Driveline Vibration Analysis), for John St. John. (Connecting up J1939 for our use.) Got the needed information and connectors to add the link.

09-26-95 Continued the work on DVA. Used the Toshiba to verify that the link is functional. Routed a cable into the cab for Eaton DVA use. Caught the DVA truck on fire and then had to clean up a big mess left by the fire extinguisher. (Actually the small fire was the steel braided fuel line chafing on the power connection at the starter motor. I moved the harness just a bit causing the problem but it was going to happen shortly anyway.)

JDIII brought the finished AS7 trans back upstairs for a final check out prior to installation.

09-27-95 Finished the wiring of the J1939 link on the DVA truck. Tested it in the garage with the Toshiba and demonstrated it to Don St. John. Called S. Schroeder and asked if he could help with getting access (and saving) the AS7 system manager shf\_tbl. This was after sending Rozsi E-MAIL last week and him forwarding it to Steve. Steve said he would look into it.

09-28-95 Figured out how to do the stuff I requested from Rozsi/Schroeder but never got an answer about. Also put the computer in the AS7 truck and tested my link ups. ---- it worked ----

E-MAILED Holmes, Smedley, Coe, McGovern about the DVA truck fire.

PERSONAL> Dr. Vicki Anton-Athens 5:45 P.M

09-29-95 Went to TCONA for an afternoon meeting concerning the 1996 budget.

10-02-95 Took the AS7 truck around the block for the first time. It made it but we have our work cut out for us!  
10-03-95 SOC meeting in the morning. Then worked on AS7 software. Working on why it crashes on downshifts.  
10-04-95 Worked on the AS7 vehicle software.  
10-05-95 Worked on the AS7 vehicle software.  
10-06-95 Worked on the AS7 vehicle software.

10-07-95 PERSONAL> Sat. - Eye Clinic of Wyandotte 9:30 A.M

10-09-95 Worked on the AS7 vehicle software.  
10-10-95 Worked on the AS7 vehicle software.  
10-11-95 Worked on the AS7 vehicle software.  
10-12-95 Worked on the AS7 vehicle software.  
10-13-95 Worked on the AS7 vehicle software.

10-16-95 Worked on the AS7 vehicle software.  
10-17-95 Worked on the AS7 vehicle software.  
PERSONAL> Dr. Vicki Anton-Athens 5:00 P.M  
10-18-95 Worked on the AS7 vehicle software.  
10-19-95 Worked on the AS7 vehicle software.  
10-20-95 Worked on the AS7 vehicle software. Got the dual inertia brakes working today. (Shifts great!) (Took Braun for a ride)

10-23-95 Worked on the AS7 vehicle software. Took Holmes, Smedley, & Fortune for demo rides. Worked on using the dual brakes with Shiftability.  
10-24-95 Worked on the AS7 vehicle software.  
PERSONAL> Dr. Vicki Anton-Athens 4:45 P.M  
10-25-95 Worked on the AS7 vehicle software.  
Went to Marshall for the TCONA ride & drive and Morschke's "STATE OF THE BUSINESS UNIT" talk.

10-26-95 Worked on the AS7 vehicle software. Johnny took the truck down to inspect the upper inertia brake - looks great! - and to fix the broken drivers seat. Took Don Rozsi for a demo ride.

10-27-95 Worked on the AS7 vehicle software. Fixed the "clunking" into start gear when coasting to a stop with the clutch in.  
PERSONAL> Dr. Misch 2:45 P.M.

10-30-95 Worked on the AS7 vehicle software. Checked all the comments and cleaned up the code in the transmission manager section. Downloaded and test drove vehicle.

10-31-95 Worked on the AS7 vehicle software. Checked all the comments and cleaned up the code in the system manager section. Downloaded and test drove vehicle.

11-01-95 Start three day test drive of vehicle in lower peninsula of Michigan.  
11-02-95 Continued test drive of vehicle in lower peninsula of Michigan.  
11-03-95 Finished test drive of vehicle in lower peninsula of Michigan.  
Trip data: Start Miles = 9559; End Miles = 10478; Total = 919 miles;  
Fuel = 119 gal; 919/119 = 7.72 MPG

11-06-95 Went to Galesburg to pick up the Top Two truck that will be use for evaluation purposes.  
11-07-95 JDIII and I gather some data on engine inertia brake improvement in shift times.  
11-08-95 Documented changes made to the stock AutoShift for the seven speed.  
11-09-95 Documented changes made to the stock AutoShift for the seven speed.  
11-10-95 Documented changes made to the stock AutoShift for the seven speed.  
PERSONAL> Brenda at 2:30 P.M.

11-13-95 Went to Galesburg to demo the 7 speed to Edelen et al.  
11-14-95 Tried to write a macro for the Top Two program - no luck.  
11-15-95 Out sick.  
11-16-95 Out sick.  
11-17-95 Worked on the Top Two system.

11-20-95 Setup the lastest AutoShift code from Marcel to replace the 7 speed with a 10 speed.  
11-21-95 Wrote a MI\_PER\_HOUR reading routine for the AS7 and bench tested it.  
11-22-95 Tested the MI\_PER\_HOUR routine in the truck.  
11-23-95 HOLIDAY  
11-24-95 HOLIDAY

11-27-95 Missed work because our furnace went out during the night. It took two trips out by the technician to get it working again.  
11-28-95 Went out to I-94 and Middlebelt to get acceleration data on the seven speed transmission. Gave the truck to JDIII to remove trans. Drove the 18 speed TOP2 around the block for the first time.  
11-29-95 DOT physical and then TOP2 work.  
11-30-95 TOP2 work.  
12-01-95 Jim Slicker electric XY motor meeting. (Handley, Nowicke, Smedley).

12-04-95 Started the J1939 harness installation in the Concept Kenworth. Downloaded the ball ramp test software for Greg. that I worked on over the weekend.

12-05-95 Finished the J1939 harness installation in the Concept Kenworth.

12-06-95 Downloaded and tested the base AutoShift system in the Kenworth. Added ball ramp inertia brake code to the system manager.

E-MAILED John Nowicke asking for a transmission manager with extra solenoid drivers for Tom's 10 speed.

12-07-95 Downloaded base 10 speed AutoShift code into the Freightliner that was the 7 speed now that the transmission has been changed. Started working on "performance" code for the 10 speed.

12-08-95 Downloaded and tested the "performance" code for the 10 speed. Only once around the block since the drive shaft needs to be modified. Met with J. Slicker and D. Smedley about the X-Y motor testing.

12-11-95 Further tested the "performance" code for the 10 speed AutoShift. It really is working very well.

12-12-95 Wrote the "skip shift" routine for the 10 speed AutoShift.

12-13-95 Downloaded/tested the skip shift routine in the 10 speed AutoShift. Bob Lee lent me a laptop and I configured it for doing Greg's ball ramp vehicle. Went through PANEL with Greg so he won't need me.

12-14-95 Drove Greg's ball ramp truck around the block for the first time. Found that the laptop for Greg did not have COMPAQ DOS on it so I could not slow it down to run PANEL. Spent rest of day installing COMPAQ MS-DOS 5.0 into it.

12-15-95 Eaton Service Awards.

12-18-95 Group meeting. Worked on Greg's truck with Tom and Greg. Worked on a PANEL data reformater.

12-19-95 dSpace meeting. Worked on Greg's truck to swap out the transmission manager after it malfunctioned. (Mike Miller did the actual swap but I worked on the reprogramming and then testing of Greg's brake.)

12-20-95 TCONA demonstration of performance features in 10 speed truck.

12-21-95 Ran drag strip data on the 10 speed in different performance modes.

12-22-95 VACATION DAY - 6 hours.

PERSONAL> Fri. - Brenda at 2:30 P.M.

12-25-95 MERRY CHRISTMAS !!!!!

1996 Personal Log of:

Ronald K. Markyvech

01-01-96 .... and a HAPPY NEW YEAR !!!!!  
01-02-96 Worked on Greg's ball ramp software system.  
01-03-96 Worked on Greg's ball ramp software system. Had a meeting with the ball ramp group to discuss the ball ramp AutoClutch.  
01-04-96 Worked on Greg's ball ramp software system. Started programming some hill hold software.  
01-05-96 Showed Greg the hill hold feature. He liked it.

01-08-96 Put Greg's test bench system manager, (PWM driver), in Tom's ten speed truck. Had to add wires to the harness for the driver. Tested it in the parking lot, (hill hold), and it seemed to work. Greg's truck, (the silver Kenworth with the J1939 Cummins), does not shift well so the Freightliner will be a better demo truck for later this week.

01-09-96 Added better control of the Hill Hold feature in Greg's software.  
01-10-96 Added code to Greg's software that will let him use any of the three types of engine inertia brakes. When with him and Mike Miller to Kensington Hill to test the performance of the three brakes. Greg's was the clear winner.  
01-11-96 Attended a Mack TopTwo "kick-off" meeting at TCONA.  
01-12-96 Started work on "Shiftability" for Marcel's double upshifts with the Jake brake.

01-15-96 Worked on skip shiftability with Tom.  
01-16-96 Worked on skip shiftability with Tom.  
01-17-96 Worked on skip shiftability with Tom. Attended the TCOE meeting in the afternoon.  
01-18-96 Worked on skip shiftability with Tom.  
01-19-96 Changed the PWM frequency for a set of code on Greg's ball ramp test bench setup. Archived the code from the bench and his truck laptop.

01-22-96 Worked on skip shiftability with Tom. Group meeting in afternoon.  
01-23-96 Worked on skip shiftability with Tom.  
01-24-96 Worked on skip shiftability with Tom.  
01-25-96 Worked on skip shiftability with Tom.  
01-26-96 Made skip shift plots for Tom. Cleaned up office.

01-29-96 Worked on skip shiftability with Tom. Fixed upshift routine picking a downshift too early. Went to kensington grade to test it.  
Cleaned up the code and comments.  
01-30-96 Worked on skip shifting.  
Out sick (3 hours?)  
01-31-96 Took AutoShift to TCONA to show Marcel skip shifting.  
02-01-96 Out sick 8.5 hours.  
02-02-96 Out sick 6.0 hours.  
Brenda 2:30 P.M.

02-05-96 Started looking at the Mack Top 2 software and hardware. Ordered chip extractors, (2), for the Flash memory chips.  
Finished and turned in a patent disclosure for controlling shut off point of the Jake brake.  
02-06-96 Spent 4 hours working on KEY macros for AutoShift.  
Continued looking into Mack Top 2.  
02-07-96 Worked on Mack Top 2 - figured out how to link all of the files.  
02-08-96 Attended an AutoClutch brainstorming meeting in Galesburg. Only Al Davis attended from TCONA!!!  
02-09-96 Started finding/writing Tom's truck based inertia brake test stand.  
CIMM meeting 10-12.

02-12-96 Worked on Tom's truck based inertia brake test stand.  
Worked on Mack Top Two.  
02-13-96 Worked on Tom's truck based inertia brake test stand.  
Worked on Mack Top Two.  
02-14-96 Asked Dan Mercure to add driver & switch parts to a system manager for Greg's ball ramp control. This ECU is intended to go in the AutoShift Freightliner. Continued to struggle with Mack Top Two.  
Talked to Kurt Colbertson, (Mack), for the first time after finding that the Mack ENG2 diagnostic software just locks up my computers.  
02-15-96 CIM meeting; Test and debugged ECU from above. Continued with Mack. Got the ENG2 diagnostic code working in my desk top PC by gutting the autoexec.bat and config.sys files. (Kurt did not know what to do)  
Made a Dell-Mack boot disk for my desk top.  
02-16-96 Worked on getting my laptop to now run ENG2. (Could not make it work)

02-19-96 VACATION 8.5 hours  
02-20-96 Worked with the Mack Top Two programmer that I had ordered.  
02-21-96 Started work on Greg's closed loop control of decel rate using his ball ramp inertia brake in the Freightliner.  
Mack Top Two - was able to download and program my own chips!

02-22-96 Worked on Greg's closed loop control, found the brake needed to be changed for a later version (lost the air gap). Was finally able to crudely close the loop to Greg's satisfaction. Now Greg wants to try a far coarser bit bang method.

02-23-96 Worked on the bit bang closed loop inertia brake control. Yeah - it seems to work fairly well.

02-26-96 Worked on AutoShift truck-as-test-stand code to:

- 1) Allow enabling of test mode through DCC (not PANEL).
- 2) Wired up a hardware counter for brake cycles - started at 28.
- 3) Added code so the engine is ramped up to 2100 RPM instead of stepping to 2100 RPM. (Easier on truck and engine - and more real)

Put 933 cycles on the truck today.

02-27-96 Attended an off-site Top Two meeting in Kalamazoo.

02-28-96 Top Two - XMSC.C96 - changed slightly, compiled, linked and downloaded just to see if it could be done. Typed and printed a memory download procedure for the EZ-EP programmer.

02-29-96 Attended SAE conference and exhibitions.

03-01-96 Top Two - declared and added a loop counter to XMSC.C96 to see if I could do it with no errors. - worked.  
E-MAILED Gooch February's Top Two monthly report.  
PERSONAL > - Dr. Misch 2:45 P.M.

03-04-96 Top Two - added first stub, (PR\_D\_S.C96), to Mack system. Talked to Mack's Jim Marsden; found out that ENG2 needs 620K of conventional memory to work. Reconfigured the Compaq laptop and got ENG2 to work. Reorganized the Mack files to put the 250 \*.o files in their own directory so that I can ZIP my own work more easily for backups.

03-05-96 08:30 - 10:00 A.M. State of Center 5469-05.  
10:00 - 11:30 A.M. TCOE meeting.  
02:00 - 03:00 P.M. Meet with Greg, Tony, Tom, & Dave about the AutoClutch program.

03-06-96 Talked to Kurt Colbertson about RAM, initializing things, downloading and programmers.  
Talked to Sophia about shift point selections.  
Talked to Eric about converting the three Mack hex files to one big hex file. So far it doesn't work.

03-07-96 09:00 - 11:59 A.M. AutoClutch meeting.  
Wrote a short letter/spec to Kurt requesting information on variables that are needed by Top Two. (J1922 Stuff)

03-08-96 Worked on Top Two.

03-09-96 Fri Nite: Worked at home on the "BIG.HEX" file converter.

03-10-96 Saturday: Worked at home on the "BIG.HEX" file converter.

03-11-96 7.0 Hours off to take care of a sick Tiffany. Worked at home on the "BIG.HEX" file converter.  
1.0 hour on Top Two. Carole mailed the memo of 3-7-96.

03-12-96 Top Two work - Adding more code to Mack base. Defined all of the constants from the Functional Performance Spec. Added a stub for the SEQ SHFT module.

03-13-96 Top Two work - Declared many of the RAM variables from the Functional Performance Spec. Started working on the SEL\_GEAR module.

03-14-96 Top Two - Continued work on the SEL\_GEAR module.

03-15-96 Top Two - Continued work on the SEL\_GEAR module.

03-16-96 Sat. - Brenda 10:15 A.M.  
03-17-96 Sun. - Wrote MACKVERT.PAS to add decimal addresses to parts of 7.M96.

03-18-96 Worked on Dan's Competitive Benchmark VMAC-II vs. ECU-B.  
Helped R. Wellums and Tom make a pneumatic inertia brake video.  
Gathered some engine response data for Shubhayu to use in his model.

03-19-96 Worked on Dan's Competitive Benchmark VMAC-II vs. ECU-B.  
Worked on Mack code - changed some of the constants to reflect 0-100% vs. 0-255 bits = 100%.  
Worked with Sophia on AutoShift model.

03-20-96 Snow day - will make it up Saturday.

03-21-96 Worked on Dan's Competitive Benchmark VMAC-II vs. ECU-B. Also tested more of the SEL\_GEAR code. Got the EZ-EP PROM programmer working on the laptop computer.  
Worked with Sophia on AutoShift model.

03-22-96 Worked on Dan's Competitive Benchmark VMAC-II vs. ECU-B. Also test more of the SEL\_GEAR code.

03-23-96 Wrote Mack weekly update for Jon. Worked on SEL\_GEAR more.  
Wrote monthly report for Mack Top Two.

03-25-96 Worked on presentation for this Thursday TCONA meeting. Worked on Mack for a short bit - nothing much done. Helped Sophia a bit.

03-26-96 Had pictures taken of Mack VMAC-II bench setup for Thursday.  
Started work on Greg's AutoClutch software and hardware. Found that the new five amp driver board does not work. Romeo is making a new design. (Sourcing driver vs sinking driver)

Helped Sohpia a bit.

03-27-96 Got Greg's AutoClutch software working on the bench. Also got the clutch pedal wiring done. Romeo finished the five amp driver board and it was tested, (crudely), and installed in the Concept Truck. Got word from Tom that Galesburg wants the AutoSplit system re-installed in a new vehicle by 4-8-96.

03-28-96 Wrote an auto-cal clutch pedal routine for Greg's AutoClutch. Started sorting thru the AutoSplit wiring harness that had been stored in a box - this harness was damaged when removed from its original installation so there is work to be done.

!CHARGED 4 hours to Mack Top Two that is really AutoSplit work.

03-29-96 !CHARGED 6 hours to Mack Top Two that is really AutoSplit work. !Worked 1 hour of OT that will be comp time.

03-30-96 !Worked Saturday on the AutoSplit installation. 6 Hours for COMP. Spent the day working on the wire harness. (see 4-12-96)

04-01-96 Spent the day working on the AutoSplit wire harness.

04-02-96 Spent the day working on the AutoSplit wire harness. Asked Barry Hogans to work on the ECU-2 that has the ZIP socket soldered on - it is intermittent. I suggested that he re-flow the solder joints on the ZIP socket.

04-03-96 The AutoSplit truck is almost done - just a little more clean up and it is done. Two hours of work for Greg's AutoClutch. Had to take "shiftability" out to get enough RAM for Greg's PWM control. The truck drove out and the AutoClutch is very controllable. Steve Edelen even tried some launches and was pleased.w

04-04-96 Drove the Volvo AutoSplit truck!!! It worked OK right out of the garage. Tom suggested that we use the intent\_to\_shift switch to allow toggling the "eng\_inertia\_brake\_allowed" flag - I did this but also added that with the clutch engaged you toggle the inertia brake but with the clutch disengaged you toggle the "splitter\_launch\_state" - neat! Downloaded new calibrations for Greg's AutoClutch at his request.

04-05-96 Cleaned up the installation mess, put away tools, "bubble" wrapped the ECU for vibration protection, final test drive, etc.

04-08-96 Took the AutoSplit Volvo to the Marshall Proving Grounds for a Demo to Volvo.

04-09-96 Put everything away from the AutoSplit. Wrote the April monthly report for AutoSplit.

04-10-96 Vacation - 8.5 hours

04-11-96 Vacation - 8.5 hours; PERSONAL> Tom Swartz - tax preparer.

04-12-96 Charged six hours to AutoSplit as comp time for working sat 3-30-96.

04-15-96 Worked on adding the torque transducer A/D input to the Freightliner AutoShift. Found that the transducer was dead. The transmission must be pulled to check out the transducer. My efforts included the A/D code as well as putting the cyclic brake testing code in the "performance" shifting software.

04-16-96 Finished setting up the programming for the A/D input. Tom informed me that we must have +/- torque readings.

04-17-96 Who Knows?!?

04-18-96 Worked on Mack Top Two.

04-19-96 Went to TCONA for the AutoSplit demo/meeting. Truck broke down twice, once in TCONA during demo's and once on the way home. Had to go get it on Sat. Also talked to J. Steeby about Mack Top Two.

04-20-96 SAT. Went with Tom to fix the truck and then stayed at work for a little while.

04-22-96 Got Greg's old 286 laptop working for PANEL data gathering. Worked on Mack Top Two TRNS\_ACT module. Worked on the torque transducer software/calibration for the Freightliner VIMSIM test.

04-23-96 Worked on Mack Top Two (TRNS\_ACT.C96). Worked with Tom to get the torque transducer software working on the Freightliner to do the VEHSIM comparison.

04-24-96 Attended Ball Ramp AutoClutch meeting. Also worked on Mack Top Two.

04-25-96 Worked on Mack Top Two.

04-26-96 Charged to 6345-01 but actually took the day off to make up for working last saturday and late last friday. Worked most of the day at home on Mack Top Two.

04-27-96 Sat - Came to work and did monthly reports and some clean up work.

04-29-96 Worked all day on Mack Top Two. Tried to get files over a modem from Kurt for JTOW - he ended up FedEx'ing them to me.

04-30-96 Worked all day on Mack Top Two.

05-01-96 Worked all day on Mack Top Two.

05-02-96 Worked all day on Mack Top Two.

05-03-96 Worked all day on Mack Top Two.

05-06-96 Attended a automation meeting with Genise, Smedley, Holmes, Organek.  
Attended an "NTU" class on emerging technologies for engineers.  
Updated Tom on Mack Top Two progress and when out the code/spec.  
05-07-96 Worked on Mack Top Two - wrote calculation of output shaft accel.  
Talked with Dan and Greg and Tom about work loads and schedules.  
05-08-96 Worked on Mack Top Two - tested output speed accel calculation.  
Attended a Genise Medium Duty AutoShift kick off meeting.  
05-09-96 Worked on Mack Top Two output shaft accel filter.  
05-10-96 VACATION - 6.0 HOURS

05-13-96 Mack Top Two - worked on the backward calculation of output shaft speed.  
05-14-96 Mack Top Two - worked on debugging the skid detection routine.  
Talked to Reed Selkirk and Eric Alexander about COMM boxes.  
Talked to Jerrard DeVito about J1939 and DVA trucks.  
Talked to KENT MOORE about COMM boxes. Andy Larowsa 2 313-426-9500.  
Talked to Steve Schroeder about COMM boxes; got correct part number.  
Ordered a COMM box from Kent Moore; Part Number: J38351-A  
05-15-96 Mack Top Two - worked on entry/exit from Top Two mode - found that the in\_gear/out of gear was not working correctly. This prevents the TOP\_TWO mode from working correctly.  
05-16-96 Mack Top Two - worked on out-of-gear sensing routine - found and fixed a bug. Changed the disengage error variables to defines to eliminate RAM - also found that I have not previously been initializing the disengage error variables.  
05-17-96 VACATION - 6.0 HOURS  
05-18-96 SAT. Came to work to check out my repaired laptop substitute.

05-20-96 Spent the day getting ready for the trip to Mack truck.  
05-21-96 Flew to Baltimore airport for Mack truck visit.  
05-22-96 Mack truck visit - flew home.  
05-22-96 VACATION - 6.5 HOURS  
05-24-96 VACATION - 6.0 HOURS

05-27-96 HOLIDAY  
05-28-96 Worked on Mack Top Two - getting it to shift automatically on bench.  
05-29-96 Worked on Mack Top Two - getting it to shift automatically on bench.  
05-30-96 Worked on Mack Top Two - getting it to shift automatically on bench.  
05-31-96 VACATION - 6.0 HOURS  
06-01-96 Sat. - Brenda 1:30 P.M.

06-03-96 Worked on Mack Top Two - getting it to shift automatically on bench.  
Kurt left a message last Friday stating that the cruise control information that I need works as I had hoped.  
06-04-96 Worked on Mack Top Two - found that special condition code noted on FPS 3.2,4.3 causes a problem - no solution yet.  
Took an inventory of AutoShift components for Tom.  
06-05-96 Mack Top Two - Worked on problem from above. I think it is fixed but need to test in actual vehicle. (Too hard to simulate on bench) cleaned up some unused RAM and started to debug the recovery mode portion of the drl\_cmds module.  
06-06-96 Mack Top Two - debugged and verified the recovery code. (see above)  
Attended a Ball Ramp Inertia Brake Test meeting.  
06-07-96 VACATION - 6.0 HOURS

06-10-96 Mack Top Two - worked on the resync portion of the code.  
Reviewed Thanh Ha's inertia brake test document.  
Went for a ride in the new AutoSplit IH truck.  
06-11-96 Got the word that Mack Top Two was put on hold until Mack gets us a test vehicle. Cleaned up code and made printouts for the binder.  
Started on the AutoSplit installation in the new IH vehicle.  
06-12-96 Worked on the AutoSplit installation in the new IH vehicle. Tom and I mapped out where to mount all the components, (ECU, eraser, ect.)  
06-13-96 Interviewed Robert Olsztyn for senior software engineer position.  
Worked on drawing and parts round up for next AutoSplit glove box work setup.  
06-14-96 VACATION - 6.0 HOURS

06-17-96 Worked on the AutoSplit installation in the new IH vehicle.  
06-18-96 Worked on the AutoSplit installation in the new IH vehicle.  
06-19-96 Worked on the AutoSplit installation in the new IH vehicle.  
06-20-96 Worked on the AutoSplit installation in the new IH vehicle.  
06-21-96 VACATION - 6.0 HOURS

06-24-96 VACATION - 8.5 HOURS; Really worked on AutoSplit; vacation on 7-08-96  
06-25-96 VACATION - 8.5 HOURS; Really worked on AutoSplit; vacation on 7-09-96  
06-26-96 VACATION - 8.5 HOURS; Really worked on AutoSplit; vacation on 7-10-96  
06-27-96 VACATION - 8.5 HOURS; Really worked on AutoSplit; vacation on 7-11-96

06-28-96 VACATION - 6.0 HOURS; Really worked on AutoSplit; vacation on 7-12-96

07-01-96 Went to Marshall for an AutoSplit demo.

07-02-96 Cleaned up desk, documentation, expense reports, ect.

07-03-96 PERSONAL > Attend funeral for Tom Martin.

Came to work briefly to try and get the "intermittent" concept truck AutoSplit system to work. Found the system to be now working!!!

07-04-96 HOLIDAY

07-05-96 HOLIDAY PERSONAL> - Brenda 12:30 P.M.

07-08-96 Charged AutoSplit but was really on VACATION - see 06-24-96.

07-09-96 Charged AutoSplit but was really on VACATION - see 06-25-96.

07-10-96 Charged AutoSplit but was really on VACATION - see 06-26-96.

07-11-96 Charged AutoSplit but was really on VACATION - see 06-27-96.

07-12-96 Charged AutoSplit but was really on VACATION - see 06-28-96.

07-15-96 ILLNESS - 8.5 hours.

07-16-96 Cleaned up mail, etc. and worked very slow cuz I still feel ill.

07-17-96 Worked on little stuff.

07-18-96 Worked on little stuff - Checked out two A/B boxes that A. Vanneste has made; looked for historical fault codes in the intermittent concept truck (none); setup a NEC laptop for my use since my old 386 is still dead; Call Marcel about files for next weeks work .....

07-19-96 Continued to setup the NEC laptop. Made VISIO sketch of new AutoSplit display. Played with intermittent concept truck - still no answer. Got stock AutoShift source code from Marcel for the TCONA Freightliner that will be in Marshall next week.

07-22-96 Worked on the stock AutoShift code from Marcel so that it can use Tom's HD CEEMAT inertia brake during upshifts.

07-23-96 Gave D. Mercure the information for laying out a new AutoSplit gear display.

Finshed up the HD CEEMAT code for Marcel's AutoShift Freightliner.

07-24-96 Went to Marshall with Tom to take vehicle data for G. Nowell.

Brought the truck back to CoRD to install a HD CEEMAT inertia brake.

07-25-96 Talked with Sophia about ECU-B X-Y calibrations. Make a Visio drawing of a gear display label for Dan Mercure - see 7/23/96. Made print outs and talked to Tom about the software for Marcells truck with the HD CEEMAT brake in it. Helped Matt with some of the details of installing a second brake switch in the AutoClutch truck.

PERSONAL> Dr. Misch 4:15 P.M.  
07-26-96 Modified the software for Marcel's AutoShift truck and did a down load.

07-29-96 Meet J. Yakimow, (and others), in A-2 for service awards (my 20th). Talked alot with Terry Ailes and Don Rozsi about the damaged inertia brake on their Freightliner. Got transmission code from Terry so that we could investigate if the software is possibly turning it on.

07-30-96 Meet with Smedly, Genise, etc about the interviewees for the software engineer position.

07-31-96 VACATION - 8.5 hours.

08-01-96 Worked on the silver Kenworth's dead AutoShift. Worked two hours of overtime. Interviewed Dennis Grace. Met with the interviewers to discuss opinions.

08-02-96 Finally got the silver Kenworth's AutoShift working.

08-05-96 Figured out that the AutoSplit Gear Display circuit of mine will not work!!! Modified the AutoSplit truck and software to use a two position momentary up/dn intent to shift button instead of the old one position intent\_to\_shift button. (on/off vs on/off/on) To do this the STI/CONFIG pin on the ECU-2 was used since it is a tri\_stated input.

08-06-96 AutoSplit; programmed a chip and tested the new circuit/software for the new knob that we will someday have.

Hunted for hours for a schematic of the gear display (AMT) that uses just the clock and data lines. This is the technique that I will have to use for our AutoSplit display.

Helped the AutoClutch team by providing an inertia brake request from the AutoShift system to the AutoClutch interface box.

08-07-96 Worked on the AutoSplit serial gear display software.

08-08-96 Worked on the AutoSplit serial gear display software.

PERSONAL > Took the afternoon off to attend an Internet class with Lois. Note: I have worked extra hours to make up for the time I am absent. Most of the make up time was spent fixing the AutoShift system in the gray Kenworth.

08-09-96 Continued to work on the AutoSplit serial gear display software.

08-12-96 2:30 PM Meet with Dan and Tom for my review.

Met with the ball ramp inertia brake team to discuss the best way to transfer the technology to TCONA (Terry Ailes). Made

arrangements for a Wednesday meeting with Terry.  
Worked on the new AutoSplit gear display; finished the driver board.

08-13-96 Met with Organek, Orris, & Ha to look at how Matt did his Simulink stuff. Greg was the main focus for understanding since he will be working on it.  
Talk to Wayne and Matt about tomorrow's meeting with Terry.  
Worked on the new AutoSplit gear display.

08-14-96 Had a morning meeting with Terry Ailes from TCONA - all went well.  
Finished a VISIO drawing of the AutoSplit gear display schematic.

08-15-96 Worked on the AutoSplit display's LED board. Talked to Wayne and Terry about the "C" implementation of the ball ramp inertia brake algorithm. (Terry is still a little bit unclear - so am I)

08-16-96 Worked on the LED board for the AutoSplit display. Also talked to Terry about Wayne's code some more.

08-19-96 Worked on the AutoSplit gear display. Finished construction and benching testing.

08-20-96 Worked on the AutoSplit gear display. Installed in the truck; found that the wire harness DID NOT have a ground wire where I said it would be - did more rude things to the harness to get a ground.

08-21-96 Installed the new shift knob with the UP/DN splitter momentary switch. Test and debugged it. Changed the software to now output the correct gear codes on the display instead of test code and will also use the UP/DN switch to select the splitter\_lanuch\_state.  
Talked to Terry Ailes about the inertia brake math - not much help to him this time cause he wanted to know the math steps from the Z transform to the difference equation. After talking to Greg and Tony, I decided to tell him "Trust us about it or call Wayne for an explanation".  
Helped Jerry Ganski start setting up the "bench" for the medium duty AutoShift six speed.

08-22-96 Continued with helping Jerry to get the medium duty AutoShift bench working.  
Went for a drive around the block with the AutoSplit truck with the new gear display. (It is too dim - oh well). Some how I have managed to get the inertia brake always energized?!?!? We have to remove the connector to get the truck to work!

08-23-96 Figured out that I had accidentally commented out the code to control the AutoSplit inertia brake so that it would randomly initialize on. Wrote monthlys. Got my NEW Pentium laptop today.  
PERSONAL> 2:30 PM - Brenda

08-26-96 Worked on figuring out my new laptop.  
08-27-96 AutoSplit work. Worked on figuring out my new laptop.  
08-28-96 AutoSplit work. Worked on figuring out my new laptop.  
08-29-96 AutoSplit work. Spent most of the day downloading the old laptop data to my desk top PC. Also talked to Terry Ailes about the ball ramp algorithm and talked to Ed Handley about a downloadable ECU-2.  
08-30-96 Downloaded the last of the old Compaq laptops code. Returned old laptop to Bob Lee.

09-02-96 Vacation 8.5  
09-03-96 Vacation 8.5  
09-04-96 Vacation 8.5  
09-05-96 Vacation 8.5  
09-06-96 Vacation 6.0  
PERSONAL> Dr. Baker .... 3:15 P.M.

09-09-96 Helped Jerry Ganski with the med bench for a while. Worked on the AutoSplit program.  
09-10-96 Talked to Terry Ailes about the Ball Ramp control algorithms. Matt's and my. Worked on the AutoSplit program.  
09-11-96 Helped Greg with the Ball Ramp truck, burned up the brake!!! I guess I wasn't really much help. Made software changes to AutoSplit while Tom was in TCONA.  
09-12-96 Worked on AutoSplit Sync\_T2, Tom and I made some good progress.  
09-13-96 Worked on AutoSplit Sync\_T2, Tom and I made some good progress.  
PERSONAL> Dr. Baker .... 2:45 P.M. (for left arm)

09-16-96 Worked on the Sync\_T2 manual mode of limiting/allowing skip shifts. Worked with Ganski for a short bit. Got Dan started on adding the top two harness to the Mack truck. Talked to Terry Ailes about controlling an inertia brake - he needed the code that Tom and I gave Marcel awhile back.  
09-17-96 Worked on the Sync\_T2 manual mode of limiting/allowing skip shifts.  
09-18-96 Worked on the Sync\_T2 manual mode for forcing up/dn shifts.  
09-19-96 Worked on the Sync\_T2 manual mode for forcing up/dn shifts.  
09-20-96 Worked on the Sync\_T2 Top Two / AutoSync transition.

Attended Tony Torre's SOP software meeting.

09-23-96 Worked on the sync\_t2 system. (Mostly sel\_gear).  
09-24-96 Worked on the sync\_t2 system. (Sel\_gear & drl\_cmds).  
09-25-96 Attended "Leadership Skills and Concepts" training session.  
09-26-96 Attended "Leadership Skills and Concepts" training session.  
09-27-96 Worked on the incorrect blipping of the throttle during coasting for the Sync\_T2 system.  
PERSONAL> Dr. Baker .... 2:30 P.M. (for left arm)

09-30-96 Worked on the Sync\_T2 program.  
PERSONAL> Called FIRST HEALTH about pre-certification of PT for my left arm. After 3 visits and I must call for pre-certification.  
10-01-96 Network Conversion Training class all day.  
PERSONAL> 20th Wedding Anniversary!!!! (It has been GREAT so far!!!)  
10-02-96 Worked on the AutoSync Top Two for tomorrow's demo.  
10-03-96 Went to TCOA for an AutoSync Top Two demonstration to Morsecheck, Edelen, Gooch, Steeby & Dedow. Worked from 6:30 am to 8:00 pm.  
10-04-96 Took today for compensation for yesterday.  
PERSONAL> Ms. Brenda ... 2:30 P.M.

10-07-96 Attended Tony Torre's "Approaches To Software Improvement" session.  
10-08-96 Attended Tony Torre's "Approaches To Software Improvement" session.  
10-09-96 Attended State of Center meeting 1.5 hours.  
Worked on the Synchro Emulation Mode in the AutoSync Top Two.  
PERSONAL> 3:00 P.M. Whitton & Boutros Physical Therapists  
10-10-96 Worked with Eric von Oeyen on the AutoSync Top Two reset problem.  
Eric has installed the Nou Haus emulator in the truck to reset data collection.  
10-11-96 Worked on the reset problem in the AutoSync Top Two.  
Worked til 6:00 P.M. (4 hours O.T.)  
PERSONAL> 7:30 A.M. Whitton & Boutros Physical Therapists  
10-12-96 SAT> Worked 9:00 A.M. til 6:00 P.M., (8.5 hours O.T.), on the reset problem in the AutoSync Top Two.  
10-13-96 SUN> Worked 2.0 hours on restructuring the AutoSync Top Two code to get a super loop.

10-14-96 Worked on AutoSync Top Two - only got 1 reset today!!!!  
PERSONAL> 7:30 A.M. Whitton & Boutros Physical Therapists  
10-15-96 Worked on AutoSync Top Two.  
Went to the SAE Truck and Bus Convention at Cobo Hall.  
PERSONAL> 7:30 A.M. Whitton & Boutros Physical Therapists  
10-16-96 Attended an 18 spd AutoShift kick off meeting in TCOA. Also met TCOA managers (Morsecheck, Best, Detloff) in Marshall for an AutoSync Top Two pre-demo before the Volvo demo Friday.  
Worked a 12 hour day. (4 hours O.T.)  
10-17-96 Worked on AutoSync Top Two.  
10-18-96 Marshall, MI Volvo AutoShift Top Two demo. (With Tom and JD!!!!)  
10-21-96 Help Jerry with Med duty for an hour. Worked on the AutoSync.  
PERSONAL> 7:30 A.M. Whitton & Boutros Physical Therapists  
10-22-96 Went to Marshall for a AutoSync Top Two demo to Snyder Trucking.  
The demo went very well!!!  
10-23-96 Cleaned up the AutoSync Top Two for leaving at TCOA. Also went for a ride in the Mack vehicle after a conference call with TCOA people. (Jeff Carpenter is the new Mack contact).  
PERSONAL> 7:30 A.M. Whitton & Boutros Physical Therapists  
10-24-96 Cleaned bench where Eric was testing the AutoSync. Wrote monthly for AutoSync. Talked to Terry Ailes about ball ramp control techniques.  
Took half day off comp time.  
10-25-96 Worked on ?  
PERSONAL> 7:30 A.M. Whitton & Boutros Physical Therapists

10-28-96 Worked on Mack Top Two.  
PERSONAL> 7:30 A.M. Whitton & Boutros Physical Therapists  
10-29-96 Worked on Mack Top Two.  
10-30-96 Worked on Mack Top Two.  
PERSONAL> 7:30 A.M. Whitton & Boutros Physical Therapists  
10-31-96 Worked on Mack Top Two.  
PERSONAL> 7:30 A.M. Whitton & Boutros Physical Therapists  
11-01-96 TCOA meeting  
11-04-96 Worked on Mack Top Two.  
PERSONAL> 7:30 A.M. Whitton & Boutros Physical Therapists (11th & last)  
11-05-96 Worked on Mack Top Two. Had a meeting at CoRD-DC with; Genise, me, VonDeyen, Steeby, Carpenter.  
11-06-96 Worked on Mack Top Two. (Finally got the first automatic shifts!!!!)  
11-07-96 Worked on Mack Top Two. Talked to Ganski about med duty AutoShift.  
11-08-96 Wrote and sent a Mack Top Two weekly update. Studied yesterday's shift data.

11-11-96 Worked on the filtering of IS speed.  
11-12-96 Worked on the filtering of IS speed.  
11-13-96 Checked out the addition of diagnostic lamps on the Mack Top Two solenoids. Found a problem - both lamps are on for 9th when only LOCKOUT should be on!  
11-14-96 Corrected the harness wiring problem in the Mack Truck.  
11-15-96 Tested the Mack truck to make sure the harness was now correct.  
PERSONAL> - Ms. Brenda ... 2:30 P.M.

11-18-96 Took data on "man\_mode\_req" for the Mack truck.  
11-19-96 Helped Ganski with the Med truck; Worked on Mack "man\_mode\_req".  
11-20-96 Group meeting in the morning.  
11-21-96 Worked on the Mack truck.  
11-22-96 Worked on the Mack truck.  
Fri. - Dr. Baker .... 2:45 P.M.

11-25-96 Drove the Mack Top Two out to Marshall for a demo to Jon Steeby and Jeff Carpenter. Also present was Tom Genise and Eric VonOeyen. Jon and Jeff were more than satisfied with the vehicles present state of performance.  
11-26-96 Made the Mack Top Two software listings binder and floppy for TCOA.  
11-27-96 Took Mack Top Two on long shake down cruise. Started to button up the system. Re-wired the dash harness to eliminate the (6) wire butt connectors that had been used.  
11-28-96 Holiday  
11-29-96 Holiday

12-02-96 Finished the Mack Top Two truck - Took out the laptop tray; packed up the test board from my desk; final test drive; finished the "tech" package binder; supplied J. Steeby with truck information.  
12-03-96 Jerry Woods and I delivered the Mack Top Two vehicle to TCOA.  
12-04-96 Tom Genise and I went to TCOA for a meeting with Amsallen, Rozsi, & Janecke on how to shift the proposed 18 speed transmission.  
12-05-96 Help Mark Leonard with the Master/Slave J1939 tester software.  
12-06-96 Prepared for the trip to Schneider.

12-09-96 Left for Green Bay, WI to demo the Auto Sync Top Two truck to Schneider. (11 hour drive)  
12-10-96 Demo'd the truck at the Schneider Driver Training Center. (12 hours)  
12-11-96 Returned to Detroit. (12 hour drive)  
12-12-96 Took comp day off.  
12-13-96 Worked with Jerry on the Med duty truck.

12-16-96 Delivered the AutoX truck to Galesburg's Jon Steeby.  
12-17-96 Wrote monthly report. Explored the Internet.  
12-18-96 Helped Jerry with the Med Duty Autoshift. Explored the Internet.  
12-19-96 Worked on getting my PCMCIA CAN card program working.  
12-20-96 Got PCMCIA CAN card working.

12-23-96 Took comp time off.

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